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User Manual

MODEL QD6523ZH

Outdoor Intelligent Pan-Tilt-Zoom Dome Camera with 23x Optical Zoom and Internal Heater

Thank You for Choosing a Q-See Product!

All of our products are backed by a conditional service warranty covering all hardware for 12 months from the date of purchase. Additionally, our products also come with a free exchange policy that covers all manufacturing defects for one month from the date of purchase. Permanent upgrading service is provided for the software and is available at www.Q-See.com.

Be certain to make the most of your warranty by completing the registration form online. In addition to warranty and technical support benefits, you'll receive notifications of product updates along with free downloadable firmware updates for your DVR. Register today at www.Q-See.com!

Please see the back of this manual for exclusions.

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INTRODUCTION

This manual is written for the QD6523ZHH pan-tilt-zoom camera and was accurate at the time it was completed. However, because of our ongoing effort to constantly improve our products, additional features and functions may have been added since that time and on-screen displays may change. We encourage you to visit our website at www.Q-See.com to check for the latest product announcements. You can also find technical details and an electronic version of this manual on our online Knowledge base online at ***www.Q-See.com/support***.

Throughout the manual we have highlighted warnings and other important information that will assist you in operating your new system in a safe and trouble-free manner. Please take the time to read and follow all instructions and pay attention to alerts as shown below:

IMPORTANT! Red boxes with this icon indicate warnings. To prevent possible injury or damage to the product, read all warnings before use.

NOTE! Text in blue boxes with the Information icon offer additional guidance and explanations about how to make the most out of your system.

For your safety and to protect your camera

To prevent damage to your Q-See product or injury to yourself or to others, read and understand the following safety precautions in their entirety before installing or using this equipment.

- Care should be taken during transportation, storage and installation of this camera

WARNING! ELECTRIC SHOCK RISK!

to avoid rough handling, dropping, or other abuse in order to prevent damage to the optics or components inside the camera.

- Camera should be installed in accordance with electrical standards including keeping the camera and cable away from high voltage, using a transient voltage surge protector (UL-1449) and using only the rated power supply.
- Do not use strong or abrasive cleaners on camera body or lens. Use a damp cloth for cleaning the housing and a lens cloth for the optics.
- Do not attempt to disassemble the camera beyond removing the case to adjust settings. Only authorized, trained technicians should service this camera.
- The camera should not be immersed in water and should be mounted in a sheltered location. Do not point camera directly at the sun or other strong light source.

FEATURES

Your camera offers the following features:

- High quality video using 1/4" Sony Exview HAD CCD-II
- Automatically recognizes Pelco-D and Pelco-P protocols
- 650 TV lines of resolution daytime, 700 TV lines or resolution at night.
- Weatherproof IP66 Rating
- Color vision to 0.01Lux, Night (B/W) vision to 0.001Lux
- Automatic focus and light levels with manual override
- Vandal-proof design.
- Heater/blower for operation down to -40° (F or C)
- RS485 control.
- External alarm input.
- 3.9-89.7mm zoom lens
- 360° continuous horizontal rotation with 90° vertical movement.
- Low-noise camera rotation motor.
- Memory function retains settings in case of power loss.
- Horizontal scanning: 360° rotation
- 300°/second rotation speed, 200°/second tilt speed
- Rotation speed can adjust based on focal length
- PTZ scanning precision ± 0.5°
- 23x optical zoom, 16x digital zoom
- Camera can be controlled with an optional keyboard

BEFORE INSTALLING

Your camera is shipped with a foam collar inside the glass cover. This collar protects the camera mechanism from damage during shipping. It must be removed and discarded before powering up or operating the camera in order to avoid damaging the mechanism.

Use the included torx (star) wrench to loosen the three retaining bolts securing the camera cover to the housing. You should not remove the bolts from the cover itself. Take care to not leave fingerprints or debris on the inside of the clear cover, or within the camera housing while it is open.

Remove Screws (x3)

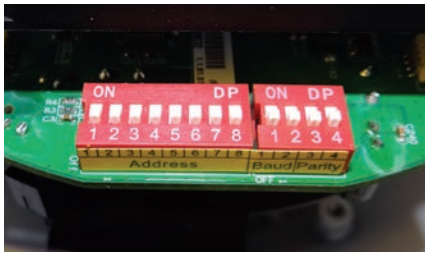
Remove and discard the foam housing and then reattach the cover to the housing, making sure that the seal is tight in order to maintain the camera's weatherproofing.

If you will be changing your camera's address or making other changes using the internal DIP switches *(see next page)*, then you should do so before closing up the camera.

SETTING BAUD RATE AND ADDRESS

Unlike conventional security cameras, PTZ cameras require an address and a connection speed to be set in order for them to properly operate. The default settings for this camera are an address of “1” and a baud rate of 9600 and using the Pelco-D protocol. However, if your camera came as part of a bundle, its address may have been set to something other than “1”. Check the **Quick Install Poster** that came with your bundle for specific details. If you are connecting the camera in accordance to the instructions included with the bundle, you should not have to change any of its settings. In either case, if you are only using a single PTZ camera you generally do not have to make any changes and you may proceed to the next section. Please consult your DVR’s manual for required settings.

Remove Screws (x3)



If you need to change your camera’s settings, they are made using a DIP (dual in-line package) switch panel located within the camera itself. In general, it is easier to do this before connecting the camera, but in some cases, you may need to change settings while the camera is connected to the DVR. In this case, please make a temporary connection by following the procedures laid out in the next section, **Connecting the Camera**. Please be advised that adjusting these settings after the camera is mounted can be difficult due to the panel potentially being inaccessible because of location, position, etc.

To access the panel, one must remove the clear dome by first twisting the metal collar around the dome counterclockwise and then removing the three screws securing the plastic dome to the camera. Take care to not scratch the clear dome while removing it. The circuit board on which the DIP switches are mounted is visible below the camera in the bottom picture.

DIP switches are binary - meaning that they are either On or Off. Different combinations of ones and zeroes on the board produce different settings. On the QD6523ZH, there are a total of 12 DIP switches.The first eight are for setting the address of the camera.The next block of four switches controls the baud rate (switches 1 and 2) - which is the speed in bits per second at which the DVR communicates with the camera for control. Switches 3 and 4 are for setting parity which some DVRs use to detect for communication errors.

Your camera is set to a baud rate of 9600. This will allow you to effectively control the camera up to 300 feet away. Areas with electronic interference may require heavier or shielded cabling. The higher the setting (may be required by some DVRs), the shorter the control distance.

SETTING CAMERA ADDRESS

	Switch (8 digits)							
Address	1	2	3	4	5	6	7	8
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF

SETTING BAUD RATE

Some DVRs may require specific connection speeds. Check your system’s manual for proper settings.

Baud Rate	Switch Number (BIT)	
	1	2
1200bps	ON	ON
2400bps	OFF	ON
4800bps	ON	OFF
9600bps	OFF	OFF

SETTING PARITY

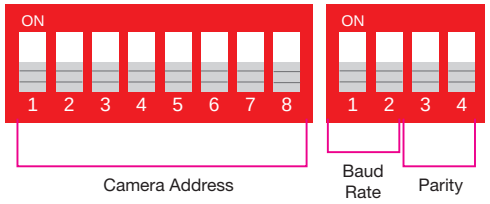
Some DVRs may require the use of parity. Check your system’s manual for proper settings.

Parity	Switch Number (BIT)	
	1	2
NONE	ON	ON
EVEN	ON	OFF
ODD	OFF	ON
NONE	OFF	OFF

EXAMPLE

The illustration on the right shows the settings as those in the photo on the preceding page. All switches are set to the OFF position:

- An address Channel 1
- A baud rate of 9600
- Parity set to NONE

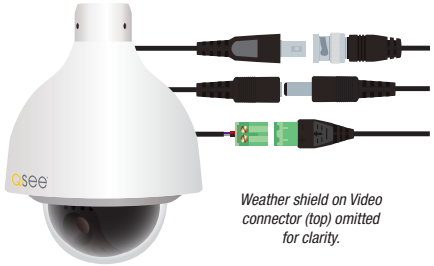


CONNECTING THE CAMERA

Before you can operate the camera, you must connect it to a system which can support PTZ operations. There are three sets of connectors - power, video and the bare control wires. This latter connection is covered on the next page. We recommend connecting the camera (at least temporarily) to the DVR to test your settings and connections before mounting it in its final location.

POWER AND VIDEO CONNECTION

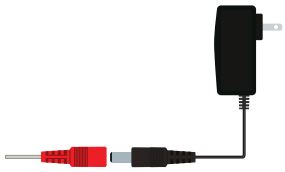
STEP 1. Connect the BNC and power leads from the camera to the matching connectors on a video/power siamese cable (Note: these may need to be purchased separately if your camera was not included as part of a bundle package).



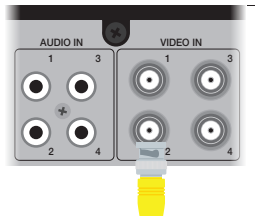
Weather shield on Video connector (top) omitted for clarity.

IMPORTANT! When connecting the power and video cable between the camera and the DVR, the "male" power end (red plug) connects to the matching power lead on the camera.

STEP 2. Connect the power lead on the other end of the video/power cable to a power adapter or power distribution panel. **Make certain that the power supply is rated for 24 volts and 3 amps.**



STEP 3. Connect the BNC connector on that same end of the cable to a **Video In** port on the back of the DVR.



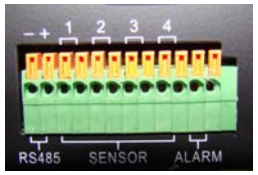
You can now plug the camera's power adapter into a surge protector and turn it on. To protect your investment, we STRONGLY recommended using a surge protector that is UL-1449 rated, for a clamping voltage of 330 or lower, a Joule rating of at least 400 and a response time of 10 nanoseconds or less.

There are five bare wires labelled "Alarm" and these are used to connect an external alarm to the PTZ camera. Use of an alarm will be covered later in this manual. These wires may be ignored if an alarm will not be used.

PTZ CONTROL CONNECTION

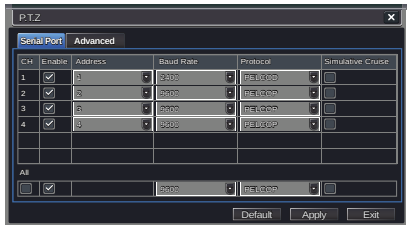
In addition to connecting the power and video leads to the camera, you must also connect the two control wire leads to the RS485 ports in the alarm block on the back of the DVR. These blocks can vary in layout as shown below, but the ports used by your DVR are generally labelled "RS485", "RS422", "PTZ" or "P/Z".

As seen in the picture on the upper right, the wire leads from the camera are two different colors and are labeled. They are also pre-installed into a block which plugs into a matching receptacle on the extension cable. The control wire leads at the other end of the extension cable must be inserted into the ports on the back of the DVR. In the case of the RS485 ports being marked as positive (+) and negative (-), the wire designated RS485A (**red tip**) is the positive lead while the wire marked RS485B (**black tip**) is to go into the negative port. Your camera comes with a connector PTZ blocks either have small screws above each port to secure the wire or require a lock above the port to be depressed with an object like a small screw driver in order to fully insert the wire. In the latter, when the lock is released, an internal clamp will keep the wire firmly secured in the port. If the wire can easily be removed from the port, then it isn't secure and you can experience control difficulties until it is properly attached. Space permitting, multiple PTZ cameras may be connected to the same ports.



Some examples of PTZ blocks. One using screws (left) and two using spring-loaded locks.

They will each require a different address which is set up using the DIP switches as covered in the previous section.



To connect your camera to the DVR over a distance, you will need to use both a video/power cable and a pair of 24-gauge wires to connect to the alarm block. If your camera came as part of a package, these wires may be included separately or as part of the video and power cable.

Once you have made your connections, you will need to make settings on the DVR in order to control it. You will need to consult your DVR's manual for this procedure, but a sample screen (from a Q-See QT-series DVR) is shown immediately above.

INSTALLING THE CAMERA

When installing your camera, it is important to select a proper site not only for field of view, but for other considerations as well:

Distance from viewing/recording device. The further the camera is from the DVR or monitor, the higher the chances of signal degradation. Typical 75Ω Video Cable provides acceptable signal at distances up to 200' (30m). At greater distances, UL-Listed shielded RG59 should be used. The camera's power supply should be located as near to the camera as possible when the distance exceeds 200' as the power level will drop over extended distances resulting in a decrease in video quality.

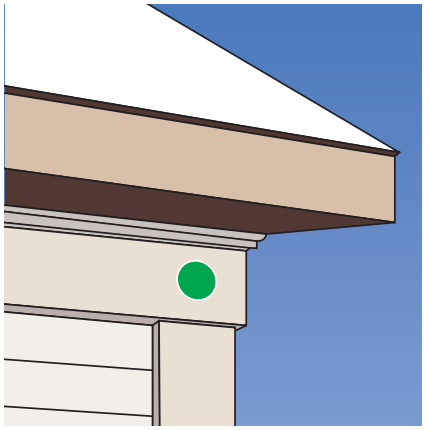
Do not place near high voltage wires or other sources of electrical interference. Electrical interference will degrade the quality of the signal.

Place camera out of reach to avoid damage.

Avoid direct exposure to weather. Do not place the camera where rain or snow will hit the lens directly nor should the camera be placed so that the sun or bright light shines directly into the lens. Your camera is weatherproof, but it will not work when submerged in water. Ensure that all power and video connections are not directly exposed to water and are protected from the elements.

Do not place camera behind a window. If there is a light source behind the camera, it can cause a reflection in the window that will obscure events on the other side of the glass.

Light levels should be approximately the same between camera and target area. A camera in a brightly-lit area looking into a shaded area, or vice versa, may produce inadequate results.



The above are guidelines and the optimal location for your camera will depend on your unique circumstances. As a general rule, the area highlighted in green in the picture to the right indicate the best type of location to mount your camera. It is sheltered from rain or snow and offers good sight lines to allow your camera to monitor a wide area. Because your camera is weatherproof, it requires less protection than weather-resistant cameras and it can be placed in more exposed locations if needed. Keep in mind that this camera is designed to operate between -40°F to 140°F (-40°C to 60°C) with a relative humidity of up to 90%) and consider wind chill and other environmental factors when selecting your location.

Your camera comes with both a ceiling and wall mount. Where you locate your camera will determine which mount you will need to use. The mounting surface must be sturdy and able to hold at least five times the camera's total weight of approximately 5 pounds.

BEFORE INSTALLING YOUR CAMERA

Use the included torx (star) wrench to loosen the three housing bolts to open the lens cover. We have also included fabric gloves with your camera to help you prevent getting fingerprints or scratches inside or outside of the clear glass dome or camera lens. Do not remove the bolts from the cover.

Remove the foam shipping insert from around the camera head. This protective packaging will interfere with camera movement. Then close the camera. Take care to not touch or move the camera mechanism or leave fingerprints or dust on the inside of the lens cover during this process.

MOUNTING THE CAMERA

Your camera is designed to be mounted on a wall using the included bracket.

1. Run the power/video/data extension cable from the DVR to the camera's location.
2. Use the mounting bracket to mark the position for the mounting holes. Ensure that the camera will be horizontal by using a spirit or bubble level. Also mark location of hole for cables to pass through the mounting surface.
3. Drill the mounting and cable holes.
4. Insert included mounting anchors into surface.
5. Screw mounting collar onto camera body.
6. Feed the cables through through the mount and out the hole in the back before securing the camera/collar assembly to the mounting bracket.
7. Tighten the three retaining screws on the collar so that the camera housing does not turn.
8. Connect the camera cables to the extension cable.
9. Secure the camera and mount assembly to the wall using the included bolts.

IMPORTANT! Do not allow the camera cable to be subject to pinching, tight bends or other severe constriction as part of its final installation position as this can damage the cable over time leading to signal loss or potential fire hazard.
Take precautions to ensure a clear work area below the camera mounting point during installation as a falling camera can cause injury or damage.

WHICH CABLE TO USE?

Your cabling needs will depend on the distance between your camera and your DVR. Q-See offers several cables to fit specific needs. These may be purchased from the same location as where you bought your camera, or on our website: ***www.q-seestore.com***

Q-See Model Number	QS50B (50') QS100B (100')	QSVRG60 (60') QSVRG100 (100') QSVRG200 (200')	QS59500 (500') QS591000 (1000')
Maximum Run Length	180'	800'	800'
Quality Output	Standard	High	High
Type	75Ω Video Cable	RG-59	RG-59
Shielded	No	Yes - UL Rated	Yes - UL Rated
Plenum Rated	No	No	No
Pre-Attached Connector			
Video	BNC	BNC	None
Audio	N/A	N/A	N/A
Power	2.1mm	2.1mm	None
Usage	Indoor/Outdoor · Do not run inside walls or underground	Indoor/Outdoor · In-wall or along wall	

To extend the RS485 data cable, you may use any 24 gauge wire, including Cat 5.

To maintain video quality:

- Video quality is always enhanced by using shielded cables.
- Always check state and local laws before installing cameras. (2011 NEC 820.44)
- To prevent video signal loss, run one continuous cable between the camera and DVR for best results. If more length is required, use the minimum number of inter-connection points possible.

Other notes:

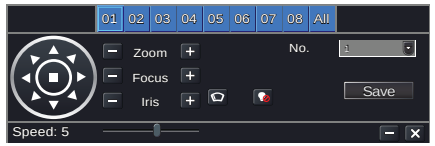
- If a cable run exceeds 800ft, we recommend using RG-6 coaxial cable which is available at most retail building supply companies.
- If your home or business is pre-wired with CAT-5 cable, then you can run up to 1000ft. Powered video baluns are required for easy installation.

OPERATION

Your camera can be controlled manually through a PTZ keyboard (if supported by your DVR), or by using the PTZ controls on the DVR to which it is connected. Depending on the software used, it is also possible to control the PTZ camera remotely when you are logged into the DVR via the Internet, a remote monitoring program or a smartphone app.

The QD6523ZH is able to be programmed directly using its on-screen display but most users prefer to use the DVR's own control inteface to program cruises - also called "scans" or "tours" on some systems - so that the camera w ill perform a set search pattern of the surrounding area. Multiple cruises may be set up and each can generally have up to 16 specific preset points. The exact numbers will depend upon your DVR.

GENERAL CRUISE SETUP PROCEDURE



You will need to consult your DVR's manual for specific instructions on creating preset points, cruises and scans. That said, there are general similarities in the process that can be covered here to get you started. Most involve the process of pivoting the camera to the desired starting point and saving that point. Then, by selecting one or more points for the camera to move to in sequence, a scan path is built which is then saved. Often, multiple paths can be saved within the DVR, which can be selected for later use.

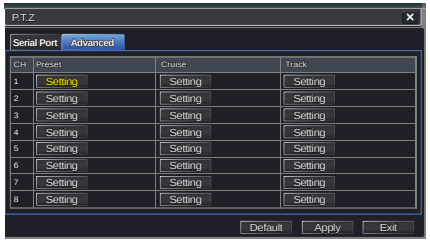
These points can be set using a special PTZ keyboard, or by using the PTZ controls on the DVR itself. Two such on-screen interfaces are shown at right; the QT-Series (top) and QC-series (bottom). In both examples, directional control is achieved by using the DVR's mouse to click on one of the directional arrows. As long as the arrow is held, the camera will move in that direction. There are no horizontal stops and the camera can rotate continuously if desired. The camera's elevation is limited to 90°.

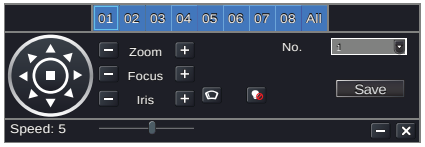
On both control panels there are controls for zoom, focus and iris (light level). The QD6523ZH has a 23x optical zoom lens which will adjust between 3.9 and 89.7mm. The camera has an auto-focus feature but the user can also adjust it to bring a specific item into focus. Likewise, the iris feature - which automatically controls the amount of light entering the lens - can also be further adjusted manually

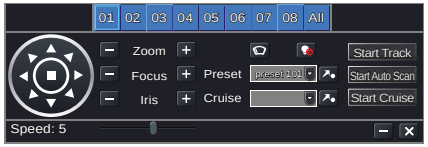
It is important to note that preset 95 is reserved for accessing the camera's internal menu and this will be covered on following pages.

EXAMPLE 1: SETTING A CRUISE

This example is based on using a QT-Series DVR without an attached PTZ keyboard. Your DVR's specific commands may differ slightly. Please consult your system's manual.







STEP 1. In your DVR's **PTZ settings** window, select the **Advanced** tab and then **Preset 1**.

STEP 2. Rotate the camera to the desired position using the arrow controls.

STEP 3. Click **Save**

STEP 4. Select **Preset 2**.

STEP 5. Rotate camera to desired second location.

STEP 6. Click **Save**

You may repeat Steps 4-6 for additional positions if desired.

STEP 7. While still in the **Advanced** tab, click on the **Setting** button in the **Cruise** column for Channel 1. This will open a new window.

STEP 8. Click **Add**.

STEP 9. Double-click on the new cruise setting to begin loading your presets.

STEP 10. Click on the **+** button to open the Preset pop-up window and select your starting preset point, speed and stop time.

Speed: 1-8 with 8 being the fastest
Time: This is the time the camera will stay pointed at this location.

STEP 11. Repeat for each preset - up to a maximum of 16 per cruise.

STEP 12. Click **OK** save your settings and close the windows until you reach the **PTZ Settings** window. Click **Apply** to save all of the settings.

STEP 13. Open the PTZ controls from the Control Bar, select your cruise in the pull-down and click ↗● to begin.

EXAMPLE 2: SETTING A TRACK

An alternate method is to utilize the Track settings - also found in the **Advanced** tab. Click the **Track** button for the right channel, use the directional controls to point the camera at your desired starting point and then click **Start Record**. The DVR will then record your movements, including delays at selected spots. Click **Stop Record** to end. Clicking on **Start Track** in the PTZ control window will start the camera on its track.

IMPORTANT! Preset 24 through 34 and 79 through 99 are reserved for camera commands and cannot be used as preset points.

ADDITIONAL SETTINGS USING THE CAMERA'S ON-SCREEN MENU

The QD6532Z offers additional features that can be accessed through the DVR's PTZ menu, but which are actually programmed on the camera itself.

Accessing the Menu

The following instructions are shown using a QT-series DVR.

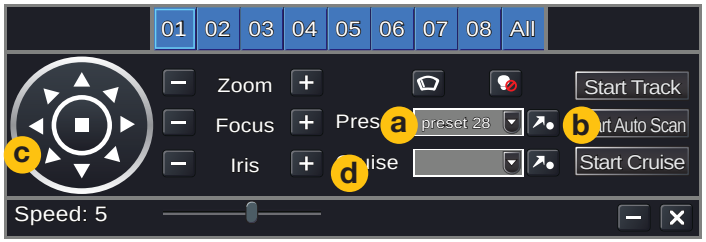
STEP 1. Right-click on your screen to open the Control Bar.

STEP 2. Click on the **PTZ Control** icon.

STEP 3. Set the preset point ***(a)***to **28** (95 may also be used)

STEP 4. Click the ↗● to the right of the Preset pulldown ***(b)***.

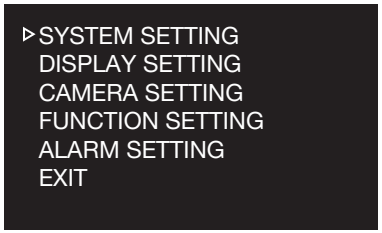
STEP 5. The on-screen menu will appear. You can navigate through it using the PTZ directional controls ***(c)***. Use the **Iris +** button ***(d)*** as "Enter" to make selections. Use the right arrow in menus with multiple options.



The Menus

When the On-Screen Display is activated, a menu with six options will be displayed. The five menus all have submenus and other options. Most functions are self-explanatory in nature. Selected features will be covered below.

Back will take you to the previous menu while **Exit** will close out of the menu.

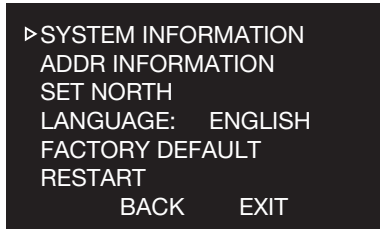


SYSTEM SETTING MENU

The first two selections show information regarding the camera's address, baud rate, and etc. These cannot be changed. The language cannot be changed as well.

North: Exit the menu, point the camera north and return to the menu. Select **Set North**. "OK" will briefly flash on screen to indicate that North has been set.

Restart: This will restart the camera and it will go through its start-up cycle but will not clear user settings.



DISPLAY SETTING MENU

You can determine what shows up on screen as the camera operates. It is important to consider that whatever text the camera displays will appear in the video recording as well.

Preset: When enabled, the camera will display the identity of each preset point as it cycles through them on the cruise.

Azimuth: This will display the horizontal (X) and vertical (Y) position of the camera.

Position: An arrow will appear showing the direction of "up". The camera features "auto flip" which means that it is moved past 90° (pointing straight down), the camera will quickly rotate 180° and continue to move the lens as directed. When the camera does this "flip", the arrow will point down indicating that directions are essentially reversed in this position.

Zoom Display: Shows the level of the optical zoom (up to 23x)

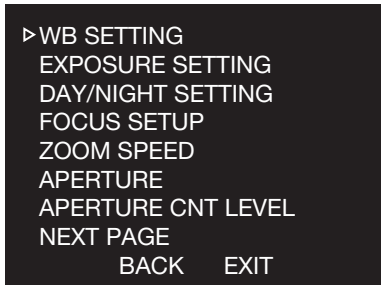
Inside Temp: This camera is equipped with an automatic heater/blower for extreme temperatures. Temperatures below -40° can negatively effect operation.

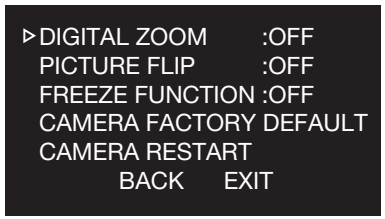
Title Display: Not supported on this model.

CAMERA SETTING MENU

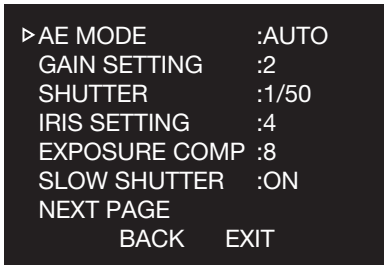
These settings allow you to adjust your camera's video. Unlike alterations to the display settings made on the DVR, these will have an effect on the recorded video. There are two "pages" of options in this menu (shown below).

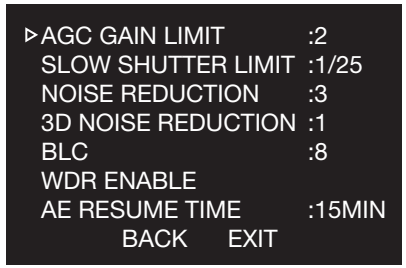
White Balance: Adjust this setting to best fit the lighting conditions where your camera is mounted. Your options are: Automatic, Manual, ATW (Auto Trace - camera monitors white areas and automatically adjusts), Outdoor and Indoor.





Exposure Setting: There are also two pages in this menu for the multiple settings that can be made to optimize the video image. Settings can be changed using the left and right directional arrows.





AUTO EXPOSURE (AE) MODE: Select from auto, manual, AV (iris priority), or TV (shutter priority).

GAIN SETTING: This adjusts the exposure, but may introduce "noise" in the image.

SHUTTER: Adjusts shutter speed to allow more light (slower) but may create blur. A faster shutter may cause the image to appear dark.

IRIS: Adjusts the amount of light received. This can be used to compensate for dark video as a result of a faster shutter speed.

EXPOSURE COMPENSATION: Adjusts brightness in cases where lighting makes subject too dark or light to be seen clearly.

SLOW AE: In brightly lit areas, this setting can compensate by lowering exposure speed and enhancing the definition.

SLOW SHUTTER: For poorly lit areas, the camera will compensate by lowering the auto exposure time.

AUTO GAIN LIMIT: Limits how far the camera will compensate for low light situations in order to reduce video "noise."

SLOW SHUTTER LOW LIMIT: Limits how slow the camera's shutter can go as it compensates for low light situations.

NOISE REDUCTION: A digital filter to remove or reduce "noise" in a video.

3D NOISE REDUCTION: An enhanced filter that compares the video over time to remove "noise."

BLC (Back Light Compensation): The camera will darken areas of bright light in the image so that foreground objects can be seen more clearly.

WDR ENABLE (Wide Dynamic Range): Adjusts video brightness when the contrast between light and dark areas is too high. This can be turned on or off in its own submenu.

AE RESUME TIME: If you normally operate your camera using auto exposure, but have made adjustments using the menus, you can have the camera revert back to the auto exposure mode after a set time, or not at all.

Day/Night Setting: You can have the camera automatically switch between day (color) and night (black and white) video depending on light level. Or, you can have it set to one mode or the other. Additionally, you can adjust the light level where the camera will switch modes.

Focus Setup: In this menu, you can turn off the autofocus feature of your camera as well as limit the range that it will focus on and its sensitivity. As the camera does not have infrared lights, the IR Light Focus Correction feature is not applicable.

Zoom Speed: Adjustable from 1-8

Aperture and Aperture Control Level: Both are adjustable from 1-16. The aperture is the opening in the lens which allows light through. The larger the opening, the more light reaches the sensor. The control level governs how the camera can automatically reduce the aperture to lower the video "noise" in low-light environments.

Digital Zoom: Enables/Disables the 16x digital zoom function, which is in addition to the 23x optical zoom function.

Picture Flip: This will electronically flip the image vertically (top to bottom).

Freeze Function: This electronically freezes the image when the camera rotates to a new preset point.

Camera Factory Default Settings: When confirmed, this will clear any user settings and restore the original factory settings.

Camera Restart: This restarts the camera and can be used to clear errors.

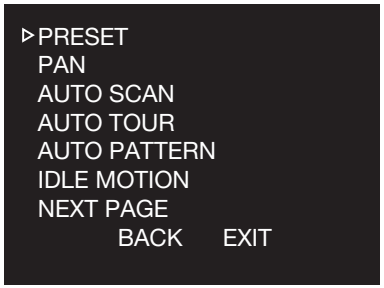
FUNCTION SETTING MENU

These settings replicate the control functions found on the DVR. Using this menu to control your DVR is not recommended as it will create control conflicts with the DVR. You will also not be able to make changes to these settings while remotely monitoring your DVR - whether through a computer or mobile device.

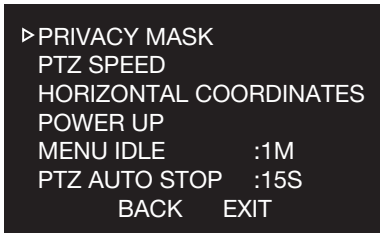
IMPORTANT! Do not use the camera's internal menu to create tours other actions as they will conflict with control of the camera through the DVR. This conflict can cause the camera to freeze or damage it.

There are two "pages" of menus (shown on the right) with the first page covering preset points, pan, scan, tour and pattern operations.

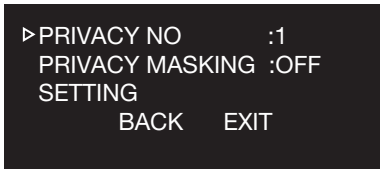
The second page contains utilitarian features that affect the operation of the camera .



Privacy Mask: This functions exactly like the feature of the same name on the DVR in that it creates an area on screen which is blacked out. Unlike the DVR's feature, the privacy mask only appears when the camera moves to view the area where the mask was created. You can create up to 24 privacy masks.



To mask off an area:



STEP 1. Exit the camera's internal menu use the controls to point the camera at the area to be masked. It should be in the center of the screen.

STEP 2. Return to the camera's internal menu and navigate back to the **Privacy Mask** menu.

STEP 3. Move the cursor down to **Setting** and click the **Iris +** button to open the configuration window.

STEP 4. A gray box will appear in the middle of the screen. Clicking the **Iris +** button while the cursor is pointing to **Resize**. Note the arrow in the upper right corner. It will show which way the box will expand. Clicking the left or right directional buttons will change the direction of the arrow.

STEP 5. When you are satisfied with your mask, move the cursor to **Save** and click the **Iris +** button. Exiting this window without saving will not create a mask.

PTZ Speed: Adjusts the speed of the PTZ from 1-5. The DVR's PTZ controls will override this.

Set Zero: This sets a "starting point" from which the azimuth coordinates are measured from.

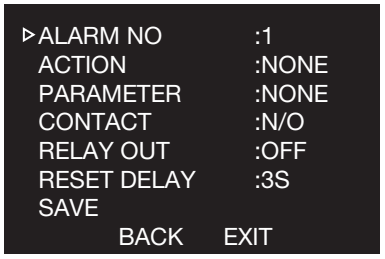
Power Up: By default, the camera will do a self-test of rotation and elevation when it powers up. If you created a preset point, tour, scan, pan or pattern in the camera's internal menu, you can have the camera perform that function upon start up. If their are multiple options, you can also choose which tour, etc. it will begin.

Menu Idle: You can adjust how long the internal menu will stay on-screen after a period of inactivity.

PTZ Auto Stop: All PTZ operations will stop when there is no activity from within the internal menu for a period of time. This is overridden by the DVR's controls and programming.

ALARM SETTING MENU

You can connect up to two external alarms, such as a motion sensor, to the PTZ camera which can be set to perform any of the functions previously saved through the internal menu. This is similar to the alarm function on your DVR with the exception that the DVR's expanded capabilities allow for greater flexibility and control. It is recommended that alarms should be connected to the DVR itself with the desired actions programmed through the DVR's PTZ and alarm menus for this reason.



CAUTION! Commands from the DVR can interfere with actions programmed through the internal menu. This conflict can cause the camera to freeze or damage it.

Alarm Number: Each alarm must have its own number. You can chose 1-7.

Action: This is the function you want to occur when an alarm is triggered. You can have it move to a preset point, start a scan or tour.

Parameter: Specifies which point/scan/tour to perform.

Contact: Set for either N/O (normally open) or N/C (normally closed). Check your alarm's manual for which setting to use.

Relay Out: You can trigger another alarm or send an alarm notification to the DVR as well as the reset time.

Reset Delay: Choose the length of time that the camera will operate in "alarm mode" before returning to its normal state.

Save: If you do not save your settings by moving the cursor to **Save** and clicking the **Iris +** button. Exiting this window without saving will not create an alarm action.

TROUBLESHOOTING

Problem	Solution
No picture or unstable image	Check both the power and video connections to the camera.
The on-screen image is blurry.	1. Check for fingerprints or dirt on the lens. 2. Check menu settings. 3. Check that auto-focus is enabled
The on-screen image is dim.	1. Check for fingerprints or dirt on the lens. 2. Check monitor settings 3. Adjust exposure and shutter settings in the internal menu.
The on-screen image is dark.	1. Adjust the monitor contrast settings. 2. Adjust exposure and shutter settings in the internal menu.
The screen flickers.	Camera may be facing sun, television or computer monitor.
Camera is frozen.	1. Disable any actions programmed through internal menu. (tours, scans, etc.) 2. Power supply may need to be located closer to camera. 3. Select Restart from internal System Settings menu. (page 15) 4. Select Factory Default from the internal System Settings menu. (page 15)
The camera is not working properly, is hot, smells or is producing smoke.	**DISCONNECT CAMERA FROM POWER SUPPLY IMMEDIATELY!** 1. Check that correct power supply is in use. 2. Send camera out for repair.

SPECIFICATIONS

Specification		
Camera	Image Sensor	1/4” EXviewHAD CCD II
	Eective Pixels	NTSC: 976(H) × 494(V) PAL: 976(H) × 582(V)
	Horizontal Resolution	Color: 650TVL; B/W: 700TVL
	Scanning System	Interlacing
	Electronic Shutter Speed	1/1s ~1/100,000s
	Min. Illumination	Color: 0.01 Lux/F1.6, B/W: 0.001Lux/F1.6
	S/N Ratio	More than 50dB
	Video Output	BNC(1.0Vp-p/75), PAL / NTSC
Camera Features	Day/Night	Auto(ICR) / Color / B/W
	Backlight Compensation	BLC / HLC / DWDR (Digital WDR)
	White Balance	Auto, ATW, Indoor, Outdoor, Manual
	Gain Control	Auto / Manual
	Noise Reduction	2D/3D
	Privacy Masking	Up to 24 Areas
	Digital Zoom	16x
Lens	Focal Length	3.9 mm~89.7mm (23x Optical zoom)
	Max Aperture	F1.6~ F3.7
	Focus Control	Auto / Manual
	Angle of View	61.68° ~ 3.06°
	Close Focus Distance	100mm~1000mm
	Pan/Tilt Range	Pan: 0° ~ 360° endless; Tilt: 0° ~ 90°, auto ip 180°
	Manual Control Speed	Pan: 0.1° ~ 250°/s; Tilt: 0.1° ~150°/s
	Preset Speed	Pan: 300°/s; Tilt:200°/s
	Preset	80(DH-SD) , 255(Pelco-P/D)
PTZ	PTZ Mode	5 Pattern, 8 Tour, 5 Auto Scan, Auto Pan
	Speed Setup	Human-oriented focal length/ speed adaptation
	Power up Action	Auto restore to previous PTZ and lens status after power failure
	Idle Motion	Activate Preset/Pan/Scan/Tour/Pattern if there is no command in the specied period
	Time Task	Auto activation of Preset/Pan/Scan/Tour/Pattern by preset-time
	Protocol	DH-SD, Pelco-P/D (Auto recognition)
General	Power Supply	DC24V 3A
	Power Consumption	12W - 27W with heater on
	Working Environment	-40-140F (-40 - 60C) <90% Humidity
	Protection Level	IP66

Q-SEE PRODUCT WARRANTY

Q-See is proud to back all of our products with a conditional service warranty covering all hardware for 12 months from the date of purchase. Additionally, our products also come with a free exchange policy that covers all manufacturing defects for one month from the date of purchase. Permanent upgrading service is provided for the software.

Liability Exclusions:

Any product malfunction or abnormalities in operation or damage caused by the following reasons are not within the free service scope of our company:

1. Equipment damage caused by improper operation.
2. Improper equipment operation environment and conditions (e.g., improper power, extreme environmental temperatures, humidity, lightning and sudden surges of electricity).
3. Damage caused by acts of nature (e.g., earthquake, fire, etc).
4. Equipment damage caused by the maintenance of personnel not authorized by Q-See.
5. Product sold over 12 months ago.

In order to fulfill the terms of your warranty, you must complete the registration process after purchasing our product. To do this, simply fill out the User’s Information Card on our website at www.Q-See.com

Qsee®

QUESTIONS OR COMMENTS? CONTACT US

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